

## Regional Haze Best Available Retrofit Technology, Reasonable Progress and Visibility Interstate Transport

The following identifies an option for EPA implementation of Best Available Retrofit Technology (BART) and reasonable progress and visibility transport requirements as focused on the SO<sub>2</sub> emissions of Texas Electric Generating Units that is based on an approach similar to the Cross State Air Pollution Rule (CSAPR) and Clean Air Interstate Rule (CAIR).

### Coal-Fired BART Units

#### Sulfur Dioxide (SO<sub>2</sub>) BART

BART-eligible coal-fired electric generating units (EGUs) would comply with mass-based source or system caps that would be equivalent to the SO<sub>2</sub> allocations the units received under the CSAPR, as outlined in Table 1.

- A source cap would apply to all the BART-eligible sources located at a given site.
- A system cap would apply to all the BART-eligible sources at one or more sites under common ownership and control.
- An intrastate trading option would also allow companies to trade between sites or systems within Texas.

The EPA has already determined that CSAPR is better than BART, and the approach, while not applying to all EGUs that were subject to CSAPR, would apply to the majority of SO<sub>2</sub> emissions from EGUs in Texas (see Table 3 below). Approximately 60% of the State EGU SO<sub>2</sub> emissions come from the BART-eligible sources. In combination with the additional sources discussed below (Table 2), the approach would apply to sources responsible for 94% of the State EGU SO<sub>2</sub> emissions. Therefore, the EPA's CSAPR-better-than-BART determination should satisfy the requirement that BART alternatives show greater reasonable progress under this approach. The overall strategy is also meant to address reasonable progress for these sources and address visibility transport requirements, i.e., help ensure that Texas emissions do not interfere with visibility program measures of neighboring states. To demonstrate this, the emission reductions from this program must meet the level of emission reductions relied on by other states during consultation and in development of their reasonable progress goals.

**Table 1: BART-Eligible Coal-Fired EGU and co-located BART-Eligible gas/fuel oil-fired EGUs SO<sub>2</sub> Allocations and 2016 Emissions**

Company	Site	Annual Allocation (tons)	2016 Emissions (tons)
AEP	Welsh Power Plant (Units 1 & 2)	13,546	6,005
CPS Energy	JT Deely (Units 1 & 2) and Sommers (Units 1 & 2)	12,314	7,627
Dynegy	Coletto Creek (Unit 1)	9,057	8,231
LCRA	Fayette/Sam Seymour (Units 1 & 2)	15,998	877
Luminant	Big Brown (Units 1 & 2)	17,032	42,470
	Martin Lake (Units 1 – 3)	35,840	25,471
	Monticello (Units 1 – 3)	29,609	24,958
	Luminant Subtotal	82,481	92,899
NRG	WA Parish (Units WAP4, WAP5 & WAP6)	18,483	21,841
Xcel	Harrington (Units 061B & 062B)	10,616	8,869
Total All BART-Subject Units		162,495	146,349

#### Nitrogen Oxides (NO<sub>x</sub>) BART

Texas' participation in the Ozone Season NO<sub>x</sub> CSAPR Program satisfies NO<sub>x</sub> BART for the BART-subject units.

<sup>1</sup> EPA CSAPR allocations after tolling: [https://www.epa.gov/sites/production/files/2016-05/unitlevelallocations\\_tolled\\_2.xls](https://www.epa.gov/sites/production/files/2016-05/unitlevelallocations_tolled_2.xls). Allocations DO NOT

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INCLUDE allowances distributed to existing units from the New Unit Set Aside (NUSA) pool after allocation to new units. Including NUSA allowances would increase allocations by approximately 3.5%; however, the amount of NUSA allowances distributed to these units is variable, changing year-to-year. Red indicates the source or system allocation is deficit to the 2016 emissions.

<sup>2</sup> Welsh Unit 2 was BART eligible and would have been subject to BART if the unit had not been retired in April 2016. Welsh Unit 2 is included to allow AEP to take credit for the shutdown.

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**Particulate Matter (PM) BART**

TCEQ's comments dated May 5, 2017 are correct that the BART Guidelines do not prohibit pollutant-specific screening. The July 19, 2006 guidance memo states that EPA does not generally recommend a pollutant specific screening approach, however, it may be appropriate for PM in certain situations. The memo provides the situation of a state relying on CAIR for NO<sub>x</sub> and SO<sub>2</sub> BART as an example where pollutant specific screening for PM may be appropriate. The approach proposed here for SO<sub>2</sub> BART and the Ozone Season NO<sub>x</sub> CSAPR Program are BART alternatives and is similar to the situation described in the memo. TCEQ's original SIP submittal screening out PM from all fossil fuel-fired EGUs for BART addresses PM BART for these sources. We note, that the 2009 demonstration did not include all BART-eligible sources, however, EPA will look at its modeling and additional analyses to confirm that the demonstration continues to show minimal impacts from PM from these particular BART-eligible sources.

**Gas-Fired and Gas/Oil-Fired BART Units**

It is acknowledged that SO<sub>2</sub> BART requirements for gas-fired and gas/oil-fired BART-subject EGUs will be addressed on a source-specific basis for purposes of meeting imminent court-ordered deadlines. Fuel restrictions consistent with current operations can be a practical approach for satisfying SO<sub>2</sub> BART on these units.

Texas' participation in the Ozone Season NO<sub>x</sub> CSAPR Program satisfies NO<sub>x</sub> BART for these units.

**Combined BART/Reasonable Progress/Visibility Interstate Transport**

A limited expansion of the SO<sub>2</sub> approach outlined above for coal-fired BART-eligible units is needed for the alternative BART approach described above, reasonable progress purposes, and, to ensure that the emissions reductions are at least the same as what was relied on by other states for the visibility interstate transport purposes. The inclusion of all these non-BART sources would address emissions from sources having significant potential contributions to visibility impairment due to their potential emissions and location and their inclusion with the BART-eligible sources would result in a coverage of approximately 94% of the EGU SO<sub>2</sub> emissions in the state. This expanded approach would use source or system caps for the BART-eligible EGUs (Table 1) and the non-BART EGUs (Table 2), and would allow companies to trade between source or system caps via an intrastate trading program. Table 4 provides a complete summary of source and system caps for all included units.

**Table 2: Non-BART Coal-Fired EGUs, SO<sub>2</sub> Allocations and 2016 Emissions**

Company	Site	Annual Allocation (tons)	2016 Emissions (tons)
Luminant	Sandow (Unit 4)	8,370	12,105
NRG	Limestone (Units 1 & 2)	24,374	20,801
San Miguel Electric Cooperative	San Miguel (Unit 1)	6,271	6,815
Xcel	Tolk Station (Units 171B & 172B)	13,962	14,977
AEP	Welsh Power Plant (Unit 3)	7,208	5,042
AEP	H W Pirkey Power Plant	8,882	4,441
AEP	Oklaunion Power Plant	4,386	1,530
Xcel	Harrington (Unit 063B)	5,055	5,386
NRG	WA Parish (Unit WAP7, WAP8)	11,724	12,296
LCRA	Fayette/Sam Seymour (Unit 3)	2,955	231
Total All Units		93,187	83,623

**Table 3: Combined BART-Eligible and Non-BART EGUs, SO<sub>2</sub> Allocations and 2016 Emissions**

	Annual	2016	% of Total
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Approach	Allocation: (tons)	Emissions (tons)	Texas EGU Emissions
BART-Eligible Coal-Fired Units	162,495	146,349	60%
Non-BART Units	93,187	83,623	34%
Combined Total	255,682	229,972	94%
Total Texas EGU Emissions	279,740*	245,737	

\*Total CSAPR allocation for existing units

**Table 4: System summary: Combined BART-Eligible, and Additional Non-BART units, SO<sub>2</sub> Allocations and 2016 Emissions**

Company	Site	Annual Allocation: (tons)	2016 Emissions (tons)
AEP	Welsh Power Plant (Unit 3)	7,208	5,042
	Welsh Power Plant (Units 1 & 2)	13,546	6,005
	H W Pirkey Power Plant	8,882	4,441
	Oklahoma Power Plant	4,386	1,530
	<i>AEP subtotal</i>	<i>34,022</i>	<i>17,018</i>
CPS Energy	JT Deely (Units 1 & 2) and Sommers (Units 1 & 2)	12,314	7,627
Dynegy	Coletto Creek (Unit 1)	9,057	8,231
LCRA	Fayette/Sam Seymour (Units 1 & 2)	15,998	877
	Fayette/Sam Seymour (Unit 3)	2,955	231
	<i>LCRA subtotal</i>	<i>18,953</i>	<i>1,108</i>
Luminant	Big Brown (Units 1 & 2)	17,032	42,470
	Martin Lake (Units 1 – 3)	35,840	25,471
	Monticello (Units 1 – 3)	29,609	24,958
	Sandow (Unit 4)	8,370	12,105
	<i>Luminant subtotal</i>	<i>90,851</i>	<i>105,004</i>
NRG	Limestone (Units 1 & 2)	24,374	20,801
	WA Parish (Units WAP4, WAP5 & WAP6)	18,483	21,841
	WA Parish (Unit WAP7, WAP8)	11,724	12,296
	<i>NRG subtotal</i>	<i>54,643</i>	<i>54,940</i>
San Miguel Electric	San Miguel (Unit 1)	6,271	6,815
Xcel	Tolk Station (Units 171B & 172B)	13,962	14,977
	Harrington (Units 061B & 062B)	10,616	8,869
	Harrington (Unit 063B)	5,055	5,386
	<i>Xcel subtotal</i>	<i>29,633</i>	<i>29,232</i>